Lab 11 Template – Ethan Roepke

Part 1:

1) **Screenshot of the genesis block**(5 points)

```
cpre3310@cpre3310:~/homework/lab11$ cat genesis.json
{
  "config": {
        "chainId": 3310,
        "homesteadBlock": 0,
        "eip150Block": 0,
        "eip155Block": 0,
        "eip158Block": 0,
        "byzantiumBlock": 0,
        "constantinopleBlock": 0,
        "petersburgBlock": 0,
        "istanbulBlock": 0,
        "berlinBlock": 0,
        "ethash": {}
},
  "alloc"      : {},
  "coinbase"   : "0x0000000000000000000000000000000000000000",
  "difficulty" : "0x2000",
  "extraData"  : "",
  "gasLimit"   : "0x2fefdf",
  "nonce"      : "0x0000000000000000331",
  "mixhash"    : "0x0000000000000000000000000000000000000000000000000000000000000000",
  "parentHash" : "0x0000000000000000000000000000000000000000000000000000000000000000",
  "timestamp"  : "0x00"
}
cpre3310@cpre3310:~/homework/lab11$
```

Part 2:

1) **Screenshot of bootnode identifier**(5 points)

```
cpre3310@cpre3310:~/homework/lab11$ cat bootnode
enode://e221796222f35688ecdfc4f01143a9665c4144d44013598044 5c1c0d6242ea772d92e7aec4040297017c3f2cb13eb29e53d80d9886c57f4ab53cbf14085d7ed4@34.18.12.150:30301
cpre3310@cpre3310:~/homework/lab11$
```

2) **Individual node's identifier with Ubuntu desktop's IP address**(15 points)
enode://0281941bb68f002181d33f545fabdaba40372e3c2b1a3a3f1cd065d5492b1
9050d686ea0adfdbb006aa58da96c903272a1edcbc9298bf6ce59d2d706e0e31f04
@81.59.123.1:30303

3) **Screenshot of peer node list**(10 points)

```
To exit, press ctrl-d or type exit
> admin.addPeer("enode://f66ce03caaf7bda29eb9034a460cefc5e8e9caa074cff636249592de819058dcb24febf98f5f90be223184d0b547b1d9eb90d1df1e58009968f0e1afdb3ec83b@34.18.12.150:30303")
true
> admin.peers
[{
    caps: ["eth/66", "snap/1"],
    enode: "enode://f66ce03caaf7bda29eb9034a460cefc5e8e9caa074cff636249592de819058dcb24febf98f5f90be223184d0b547b1d9eb90d1df1e58009968f0e1afdb3ec83b@34.18.12.150:30303",
    id: "6f05c2c9f4532351307d00e2eaeb668558e602a90d90123a9f282445c6de5ba8",
    name: "Geth/v1.10.10-stable-bb74230f/linux-amd64/go1.17.2",
    network: {
      inbound: false,
      localAddress: "81.59.123.1:47392",
      remoteAddress: "34.18.12.150:30303",
      static: true,
      trusted: false
    },
    protocols: {
      eth: {
        difficulty: 24371374490,
        head: "0x18651c1f126ce4697b81e58feda42ecc34d0835b59f6930b5616b155b47d8c88",
        version: 66
      },
      snap: {
        version: 1
      }
    }
}]
>
```

Part 3:

1) **Screenshot of balance**(5 points)

```
}
> eth.getBalance(eth.accounts[0])
4920000000000000000000
> personal.unlockAccount(eth.accounts[0])
```

2) **Screenshot of balance two minutes later**(5 points)

```
> eth.getBalance(eth.accounts[0])
3.5815050300000000211e+21
>
```

(This is a balance after I made transaction and mining for a few hours)
(Did not know we needed 2 balances)

Part 4:

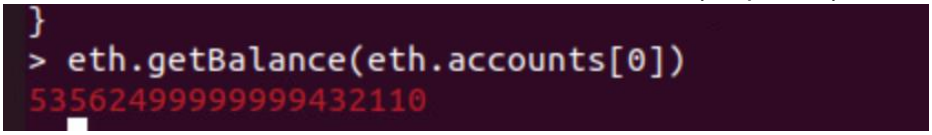
1) **Screenshot of transaction**(10 points)

```
> eth.sendTransaction({from:eth.accounts[0], to:"0x6a7ff7e11f135e9928b182d4067286490be80c8a", value:567890})
"0xb5ccaee277774de59b425d43d3a282ceeefb4bbf95e27149ef23b8fac34b745f"
> eth.getTransaction("0xb5ccaee277774de59b425d43d3a282ceeefb4bbf95e27149ef23b8fac34b745f")
{
  blockHash: null,
  blockNumber: null,
  from: "0x4c21e3aabdbe128446185dab7adcfcfb6a879be7",
  gas: 21000,
  gasPrice: 1000000000,
  hash: "0xb5ccaee277774de59b425d43d3a282ceeefb4bbf95e27149ef23b8fac34b745f",
  input: "0x",
  nonce: 0,
  r: "0xbe19d39c65c07cd0a93fbbb7603acb746b71ff8c385d8558ab7dc4f1a50ffd05",
  s: "0x508241ced17a0636cbc44c79c77fc483ed99b1f5ae61f6e3cbb4144266f7c46f",
  to: "0x6a7ff7e11f135e9928b182d4067286490be80c8a",
  transactionIndex: null,
  type: "0x0",
  v: "0x19ff",
  value: 567890
}
>
```

2) **Screenshot of transaction block**(5 points)

```
> eth.getBlock(19252)
{
  difficulty: 1742393,
  extraData: "0xd883010a0a846765746888676f312e31372e32856c696e7578",
  gasLimit: 8000000,
  gasUsed: 21000,
  hash: "0x778bda437f230d63a37d2b5798a7b05be2fd20764c5419d7ef88846a27c8474b",
  logsBloom: "0x00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000",
  miner: "0x4c21e3aabdbe128446185dab7adcfcfb6a879be7",
  mixHash: "0xbcd59e5b5d3834aeadbb01913779a2042cb39a7ab7db950ad98e9d074c33b44d",
  nonce: "0x614ff1cd1cdfbee7",
  number: 19252,
  parentHash: "0xd406607f8471778ecbe7f435dbb82073bc8b563f419a0210d36aaf93b8cc574d",
  receiptsRoot: "0x056b23fbba480696b65fe5a59b8f2148a1299103c4f57df839233af2cf4ca2d2",
  sha3Uncles: "0x1dcc4de8dec75d7aab85b567b6ccd41ad312451b948a7413f0a142fd40d49347",
  size: 647,
  stateRoot: "0x399b26817e390083f497d6d40848221951ba598ccc6b1b34cc0716eb271bf642",
  timestamp: 1731529748,
  totalDifficulty: 25494642198,
  transactions: ["0xb5ccaee277774de59b425d43d3a282ceeefb4bbf95e27149ef23b8fac34b745f"],
  transactionsRoot: "0xbe1ef1296997185e6c22872e9a5c9e3db1debb71d6491e4153426fd042ee39a1",
  uncles: []
}
```

3) **Screenshot of "final" balance after transactions**(10 points)



4) **How many US dollars would this translate to if using Ethereum PoS?**(5 points)
$ 170,838.86

5) **What is the US dollar value of EthereumPoW for one ETH?**(5 points)
$3.46

Part 5:

1) **Screenshot of latest block number**(10 points)

2) **Screenshot of minedBlocks output**(10 points)